



WCCE11 - 11th WORLD CONGRESS OF CHEMICAL ENGINEERING

IACCHE - XXX INTERAMERICAN CONGRESS OF CHEMICAL ENGINEERING
CAIQ2023 - XI ARGENTINIAN CONGRESS OF CHEMICAL ENGINEERING
CIBIQ2023 - II IBEROAMERICAN CONGRESS OF CHEMICAL ENGINEERING

Buenos Aires - Argentina - June 4-8, 2023

"The global chemical engineering working for a better future world"

Session 4: BIOTECHNOLOGY, BIOECONOMY, BIOINDUSTRY

Preliminary technical program

Room 12

Oral presentations

Monday, June 5, 2023 - 9:00 to 10:30

2907	9:00-9:30	KEYNOTE: Simulation of the conversion of Japanese waste biomass to light olefins: Evaluation of the CO ₂ conversion via water gas shift reactor and the addition of H ₂	Talero Rojas et al
1576	9:30-9:45	Techno-economic analysis of integrated biorefinery of industrial orange processing wastes	Martins et al.
1931	9:45-10:00	Assessment of single cell oil production in sugarcane biorefineries: techno- economic analysis and climate change impacts	Longati et al.
2684	10:00-10:05	Biotransformation of lignocellulosic biomass into highly valuable bioproducts	Andler, R.
1743	10:05-10:10	Optimization of phosphoric acid pretreatment conditions to produce lactic acid from eucalyptus residues hydrolysates	Moure et al
2718	10:10-10:15	Evaluation of the sugarcane bagasse pretreated with glycerol in the production of fermented sugar	Fernandez Araujo et al
2941	10:15-10:20	Integral use of whey for the joint production of galacto-oligosaccharides, probiotics and lactic acid. Prospects for a synbiotic product	Oliveros Pineda et al

Oral presentations

Monday, June 5, 2023 – 11:00 to 11:30

1895	11:00-11:15	Bio-based solvents as extractant agent to recover carotenoids from <i>Rhodospirillum rubrum</i> biomass	Rocha et al.
2624	11:15-11:20	Adsorption-Desorption Processes for Recovery of	Elhami et al

		Volatile Fatty Acids from Dilute Aqueous Streams	
1276	11:20-11:25	Fatty Acid Solvent Extraction from Palm Oil using Liquid-Liquid Film Contactor: Mathematical model Including Mass Transfer Effects	Noriega et al
1248	11:25-11:30	Experimental determination and modeling of the solubility of Cannabidiol (CBD) in pure solvents	Pulido et al

Oral presentations

Monday, June 5, 2023 – 14:00 to 16:00

2898	14:00-14:15	Development of Hydrogel from Decellularized Whole Porcine Kidney	Mondragon-Dugos et al
2059	14:15-14:30	Pure fatty acids as only carbon source in the production of polyhydroxyalkanoates (PHAs) by <i>Cupriavidus necator</i> CECT 4635	Ridella et al
1862	14:30-14:45	Degradation and biological recycling of post-consumer poly(3-hydroxybutyrate) based bioplastics	Argeiti et al
2452	14:45-14:50	In silico exploration of PHBV production by a genome-scale model of <i>Cupriavidus necator</i>	Ascencio Galvan et al
1764	14:50-14:55	Porogens addition in chitin-based chromatographic supports. Impact on chromatographic and structural properties.	Pilato et al
1554	14:55-15:00	Closing the whey cycle in the dairy industry: Development and environmental assessment of whey protein films	Etxabide Guerrero et al
2626	15:00-15:05	Bio-valorization of vinasse for enhancement polyhydroxyalkanoates production: a bibliometric analysis	Dorado Lasso et al
1565	15:15-15:30	Bacterial cellulose production via pretreatment of lignocellulosic waste stream using dielectric barrier discharge air plasma	Filippi et al
1765	15:30-15:45	Development of bio-specific adsorbent films for biotechnological applications based on sustainable polymer	Greppi Pilato et al
1549	15:45-15:50	Evaluation of the molecular weight of the alginate by changes in the agitation rate in <i>Azotobacter vinelandii</i> cultures	Ponce et al
1981	15:50-15:55	Bioprocess development for poly(3-hydroxybutyrate) production and property evaluation	Psaki et al

Oral presentations

Monday, June 5, 2023 - 16:30 to 17:30

2049	16:30-16:45	Development of a novel high-throughput assay for screening microbial proteolytic activity relevant to biogas production.	Potenza et al
1649	16:45-17:00	Is It Possible to Prevent Aggregation of α -Crystallin by Adding Sterols?	Li, K – Forciniti, D.
1264	17:00-17:05	Tailor-made biotechnology of filamentous microorganisms linking morphology and process environment	Dinius et al
1334	17:05-17:10	Morphology engineering for novel lantibiotics - how salt-enhanced cultivation affects product formation and filamentous cellular morphology	Kozanecka et al
2729	17:10-17:15	Standardization of a culture medium for bioplastic production using cacao fruit residues and a native strain	Suarez et al
2756	17:15-17:20	Effect of the cycle length on the PHA accumulation under uncoupled aerobic dynamic feeding	Varela et al



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Tuesday, June 6, 2023 - 9:00 to 10:30

Oral presentations

1247	09:00-9:30	KEYNOTE: Cell-based assays in a fully sensor equipped and automated capillary-wave microbioreactor	Viebrock et al
2382	9:30-9:45	Non-invasive Strategies for Monitoring Filamentous Fungi Fermentations	Czotscher et al
1838	9:45-10:00	Dynamic in silico assessment of potential gene targets for enhancing clavulanic acid production in <i>Streptomyces clavuligerus</i> submerged cultures	Gomez Rios et al
1717	10:00-10:05	Evaluation of biosurfactant production by fungi associated with cassava stems and leaves aiming at industrial application	Morandim Giannetti, A.A - Marelli, M.S.
1897	10:05-10:10	Biotechnological production of fungal colorants with potential as photosensitizer for antimicrobial photodynamic therapy	Almeida - Santos Ebinuma et al
2234	10:10-10:15	Valorization of milk whey obtaining lactic acid by using a co-culture and hydrolysis: a kinetic approach to the fermentation process	Rojas Quimbaja et al
2571	10:15-10:20	Challenges in the synthesis of clavulanic acid and constraint-based models of <i>Streptomyces clavuligerus</i>	Ramirez Malule et al

Tuesday, June 6, 2023 – 11:30 to 12:30

1602	11:30-11:45	Addition of polyols and cyclodextrins to modify the catalysis of levansucrase and the process of levan self-assembly	Gonzalez Garcinuño et al
2241	11:45-11:50	Production of prebiotic galactooligosaccharides from whey by a combined enzymatic system of commercial beta-galactosidases and glucose oxidase	Oliveros Pineda et al
2296	11:50-11:55	L-Asparaginase thermal stability study and application as acrylamide mitigation agent in potato chips	Bento et al
2824	11:55-12:00	Heterogeneous biocatalyst for multiphase reactors: lipase immobilization onto SBA-15	Lima, P. Goncalves, R. et al
2917	12:00-12:05	Formate Dehydrogenase modified biocathode for the simultaneous electrochemical regeneration of NADH and formic acid production from carbon dioxide	Maureira et al

1592	12:05-12:10	Optimization of the solvent extraction conditions of pine knots for the evaluation of their performance as a wood preservative	Rodao et al
2634	12:10-12:15	Two-Phases Fermentation To 2-Phenylethanol Extraction Using Solvents Selected Through Thermodynamic Model and Experimental Data	Arroyo-Avirama et al
1924	12:15-12:20	Optimization of an ecofriendly pectin extraction from Rosa rubiginosa L. husk by response surface method	Riveros Gomez et al

Tuesday, June 6, 2023 – 14:00 to 16:00

2694	14:00-14:30	KEYNOTE: Biofilm-based Cultivation: A High Throughput and Energy-Efficient Platform for Biological Methane/Biogas Conversion	Badr et al
1557	14:30-14:45	Utilization of fatty acids and food wastes by enriched environmental bacteria towards energy generation via defined co-cultivation with Geobacter sulfurreducens	Schepergerdes et al.
1964	14:45-15:00	REnergized (REthinking, REengineering, REevaluating) recovery of Rare Earth Elements from Waste Printed Circuit Boards: a bioleaching approach	Gonzalez Baez et al.
2960	15:00-15:15	Effect of solid retention time over nitrogen removal and CO2 emission in microalgae-bacteria system	Arango et al.
1407	15:15-15:30	Kinetic characterization of digestive proteinases extracted from the processing waste of South Atlantic fish	Friedman, I - Contreras, E. et al
1608	15:30-15:35	Lignocellulosic waste materials as a key component of passive systems for alkaline wastewater treatment	Drewniak et al.
1664	15:35-15:40	Assessment of bisphenol-a removal in a moving bed biofilm reactor and the impacts on nitrification and degradation of organic matter	Mello et al.
2498	15:40-15:45	A Cost-Effective Screening Station Expedites the Identification of the Optimal Methanotroph-Microalgae Cocultures for a Novel Waste-to-Value Technology	Loyal Murphy et al.



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POSTER SESSION

Monday, June 5, 2023

1196	A techno-economic assessment of cannabis oil (<i>Cannabis sativa</i> L.) extraction process. A Colombian perspective in an emergent market	Diaz, M. – Davila, J.
1360	Bioconversion of citrus by-product by <i>Talaromyces amestolkiae</i> to natural colorants: fungal biorefinery approach towards a circular bioeconomy	Lima et al
1451	Cannabidiol concentrates by means of Molecular Distillation: Pilot-scale case	Idárraga Vélez et al
1478	Production of enzymes by fermentation in a solid medium using agroindustrial by-products	Gomez Ramos et al.
1497	Experimental and theoretical growth of the probiotic bacteria <i>Lactobacillus rhamnosus</i> in whey permeate	Porporato, M. –Nicolau, V.
1555	Influence of retention time and substrate-microorganism ratio on the acidogenic fermentation of wastewater from the cassava starch extraction process for the production of volatile fatty acids	Sanchez Ledesma et al
1580	Biotechnological Production of Cellulose Nanocrystals through Enzymatic Hydrolysis of Different Agroindustrial Wastes	Da Silva, M. - Goldbeck, R.
1604	Production of natural colorants by <i>Talaromyces amestolkiae</i> applying different carbon sources: an initial approach to biorefinery	Lima, C. Santos Ebinuma, V.
1636	Evaluation of dyeing polyamide fabric pretreated with protease	Imme et al.
1650	Effect of Methanol and Glycerol on the Structure of Human Serum Albumin Solutions	Naka, P. –Forciniti, D.
1651	Effect of glycosylation on the aggregation of insulin A-chain fragments	Naka, P. –Forciniti, D.
1706	Preliminary evaluation of Flavourzyme, Savinase and Alcalase concentrations in the hydrolysis of soybean meal proteins	Porto et al
1708	Optimization of revalorization process from wine industry residual biomass	Bonfilgi et al

Tuesday, June 6, 2023

1714	Production of gibberellic acid (GA3) from <i>Fusarium fujikuroi</i> by submerged fermentation	Porto et al
1727	Characterization of the biochemical and kinetic properties of lipase from <i>Burkholderia cepacia</i> immobilized on diatomaceous earth support	Hidalgo et al
1731	Optimization of transglutaminase production by fungi associated with <i>Manihot esculenta</i> , Crantz stems and leaves	Morandim Giannetti - Oshikata
1749	Determination of the kinetic and thermodynamic parameters of the enzymatic synthesis of hexyl oleate ester	Assis et al
1753	Evaluation of sulfamethoxazole antibiotic removal using a mobile bed reactor with biofilm	Lima et al
1771	Biofloculants as a biotechnological solution to microplastics pollution	Salehizadeh , H.
1801	Carotenoids production by mutant strains of <i>Flavobacterium</i> spp. Y <i>Chryseobacterium</i> sp. P36 obtained by UV radiation	Pena, S. - Saravia , V.
1839	Model-based optimization of a conventional SBR process for biological C, N, and P removal from wastewaters	Santa Cruz et al
1902	Characterization of magnetized copolymer for enzyme immobilization and application in emollient ester synthesis	Assis, G.- Freitas, L. et al
1932	Influence of C/N ratio and medium composition on <i>Rhodotorula toruloides</i> production of microbial oil and carotenoids	Vaz, L. – Miranda, E. et al
1995	Production of the food enzyme acetolactate decarboxylase (ALDC) from <i>Bacillus subtilis</i> ICA 56 using agro-industrial residues as feedstock	Oliveira et al.
2099	Production of exopolysaccharides by <i>Ensifer meliloti</i> in different culture media with soybean molasses	Ferreira Filho et al.
2151	Production of biosurfactant by <i>Acinetobacter venetianus</i> AMO1502: Evaluation of the operational conditions	D'Almeida et al.

Wednesday, June 7, 2023

2161	Optimization of vinasse spray-drying	Trape et al.
2228	Characterization of low-density polyethylene (LDPE) degradation activity by cocultures of the genus <i>Aspergillus</i> sp in synergy with microbiota present in composting	Garcia Rojas et al.
2286	Urease immobilized on zeolites produced from fly ash – a value added product for bioremediation of diverse waste	Dabrowska et al
2293	Increasing microalgae production and preventing biofilm formation in a horizontal tubular photobioreactor	Belohlav - Jiorut
2307	Use of hydrolysates from waste microalgal biomass for bioplastics production by <i>Paracoccus denitrificans</i> . A preliminary study	Pila et al.
2376	Valorization of industrial side-streams towards high value-added food products by microalgae cultivation	Kelingesinds et al.
2423	Simulation of the enzymatic clarification of glucose syrups from agro-industrial wastes	Morales et al
2444	Co-fermentation of pentoses and hexoses from lignocellulosic material for 2G ethanol production	Kemita, L. - Pratto , B.
2478	Diesel oil biodegradation and biosurfactant production by <i>Acinetobacter venetianus</i> AMO1502	Oliveira et al
2555	Enzymatic biolubricant production by lipase B from <i>Candida antarctica</i> immobilized on lignin-magnetite composite	Levy et al.
2573	Evaluation of commercial silica drying pretreatment techniques in multipoint covalent immobilization of Eversa Transform 2.0	Carvalho et al
2581	Analysis of <i>Azotobacter vinelandii</i> OP cultures using apple waste for the production of polyhydroxybutyrate (PHB).	Rojas et al.
2590	Screening of <i>Burkholderia cepacia</i> lipase immobilized in different supports for esterification of FFA of Licuri oil	Rodrigues et al.

Thursday, June 8, 2023

2596	A strategy for the selection of promising value-added products from forest and agricultural resources in the Northeastern Argentinian Region (NEA)	Rivaldi et al.
2627	Evaluation of hydraulic and solid retention time on the removal of nutrients and organic matter from a municipal wastewater	Nashiro et al.
2632	Production and characterization of Latex clearing protein enzyme from <i>Rhodococcus rhodochrous</i> .	Guajardo, C - Andler, R.
2687	Comparative study of biodiesel production from Babassu Oil (<i>Orbignya sp.</i>) using Eversa lipase and CALB as biocatalyst	Jeferson et al.
2698	Valorization of residual glycerol from the biodiesel industry in products with high added value biocatalyzed by the enzyme Eversa Transform 2.0	Goncalves et al.
2723	Study of the production of citronellyl pentanoate ester by lipase immobilized on magnetic nanoparticles conjugated with lignin from cashew apple bagasse	Prasilde Rocha et al.
2744	Production of polyhydroxyalkanoates from volatile fatty acid mixtures by pure culture action	Vergara et al.
2750	Modeling and Simulation of Batch Enzymatic Reactors for the Ethyl Levulinate Synthesis	Santos, T. - Langone, M. et al.
2755	Evaluation of the nutritional supplementation of sugarcane straw hemicellulose hydrolyzate for biosurfactant production by <i>Naganishia adeliensis</i>	Alva-Sanchez et al.
2870	Engineering cell release processes for the production of biopharmaceuticals	Paiva, G. - Pedrolli, D.
2908	Evaluation of FDH and GlyDH immobilization on different types of mesoporous silica	Garcia Uribe et al.
2938	Evaluation of two different β -galactosidase enzymes based on the operating windows for fructose syrup production	Clavero et al.
2945	Bioalcohol production from regional wastes	Orofino et al.
2952	Techno-economic assessment of the production of broccoli heterologous myrosinase from <i>S. cerevisiae</i> MGY70-myr	Jimenez et al.
2955	Production of lactulose catalyzed by magnetic crosslinked enzymatic aggregates (mCLEAs) of β -galactosidase from <i>Aspergillus Oryzae</i>	Araujo Maia et al.
2966	Transformation of tannery wastewater by advanced oxidation processes for the prod of algae-based metabolites	Urbina et al.